PC Power Management
Reducing PC energy consumption

Glenn Baker

Rebuild Hawaii

VERDIEM
Power Management for PC Networks

Environmental & Energy Crisis hits IT
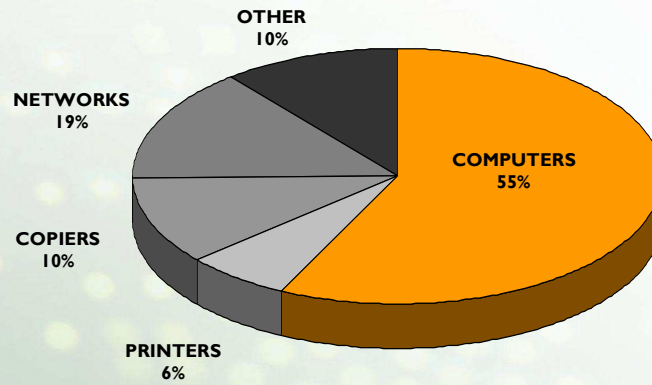
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- **IT becoming the third-largest source of power demand**
  - Arthur D. Little Inc for Dept of Energy

- **PC network energy consumption growing 4.1% annually**
  – US Dept of Energy and Energy Information Administration

Worldwide IT and associated air-conditioning generates more than an estimated billion tons of carbon per year

IT Governance, June 2006 Analysis: IT power crisis – what can CIOs do?

Electricity prices increased almost 11% from early 2005 to early 2006

CIO Insight, July 2006: The Greening of the CIO

Office Equipment Energy Consumption

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OTHER
10%

NETWORKS
19%

COMPUTERS
55%

COPIERS
10%

PRINTERS
6%

2005 U.S. Office Equipment Energy Consumption US Department of Energy

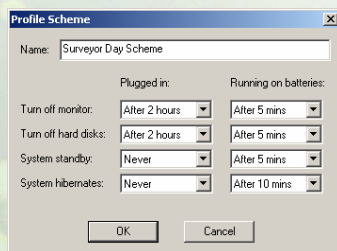*U.S Department of Energy TIAX Report 2002

How much Energy?

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Power Draw (watts)

Device	Active	Sleep Standby	Off
Desktop PC	100	6.0	1.5
CRT Monitor (17 in.)	90.0	9.0	4.0
LCD Monitor (17 in.)	35.0	4.8	0.8

- **PC/Monitors Consume 300 – 750 kWh per year**

Positive signs, but..

- **PCs getting more efficient, but more powerful**
- **Flat screen monitors use less, but getting larger**
- **Laptops use less, but more expensive and not always appropriate**
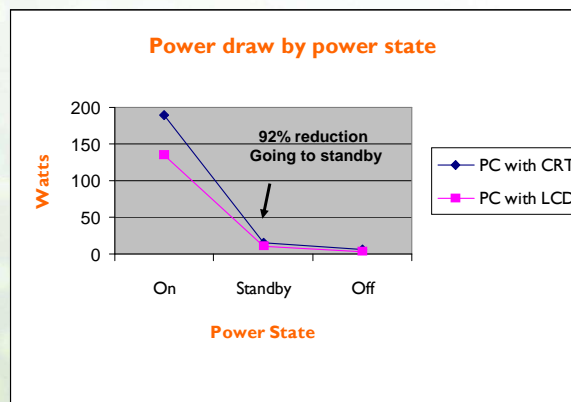- **Power savings settings are available, but 6% of the Users have them set**

Profile Scheme

Name: Surveyor Day Scheme

	Plugged in:	Running on batteries:
Turn off monitor:	After 2 hours	After 5 mins
Turn off hard disks:	After 2 hours	After 5 mins
System standby:	Never	After 5 mins
System hibernates:	Never	After 10 mins

OK   Cancel

Give them a rest!

Power Draw (watts)

Power draw by power state

92% reduction Going to standby

- PC with CRT
- PC with LCD

Watts (200, 150, 100, 50, 0)

Power State (On, Standby, Off)

Device	Active	Sleep Standby	Off
Desktop PC	100	6.0	1.5
CRT Monitor (17 in.)	90.0	9.0	4.0
LCD Monitor (17 in.)	35.0	4.8	0.8

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Success Factors

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Balancing end-user and IT needs is critical to PC power management success and savings

IT Productivity
•PCs available for updates
•Make changes easily
•Low maintenance
•Few helpdesk calls

User Productivity
•No disruptions
•Appropriate control

Results
•Measurement and Proof - Energy savings
•Report and project

Strategies for PC Power Management

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Potential Solutions to Eliminate
PC Energy Waste

- Behavior modification (least effective)

  Memos, email messages, and an ongoing PR campaign

- Scripts, patches, imaging (more effective)

  Software scripts or routines run by network administrators

- Power management software (most effective)

  Comprehensive software applications that measure, manage, and reduce PC energy waste

Addressing PC Energy/Environmental Waste

Computer Life Cycle Management

Buy Smart

Dispose Properly
Recyclers
Product take-back programs

Manage Effectively
PC Power Management

Thank you

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